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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Taroh Terashi

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EXAMINER

MCNALLY, DANIEL

ART UNIT

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1791

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/666,235	Applicant(s) TERASHI ET AL.	
	Examiner DANIEL MCNALLY	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4 and 19-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4 and 19-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 22 recites the limitation "the position detecting device" in line3. There is insufficient antecedent basis for this limitation in the claim. Claim 19 discloses a position detecting device, so claim 22 can be amended to depend from claim 19 rather than claim 4.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 4 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takemoto et al. [US6000784, of record, previously cited, herein "Takemoto"] in view of Hamada [JP11-291539A, of record, previously cited, machine translation previously provided].

Takemoto discloses a method of adhering parts with light energy curable adhesive. The method comprises positioning a part (head 11) and an adhering target (head holder 14) at a prescribed relative position (as shown for example in Figures 14-17), coating plural sections between the parts and adhering target with a UV light

Art Unit: 1791

curable adhesive, irradiating UV light energy at the plural sections of adhesive, generating curing shrinking forces in the light curable adhesive at the plural sections, and adhering the part to the adhering target while maintaining the part and target at the prescribed positions (columns 6, 7-8, 10, and for example embodiments 11-14).

Takemoto disclose the part and the adhering part may deviate, or be relatively displaced from each other, during the bonding (embodiment 13). Takemoto discloses in the 3rd embodiment that irradiation of UV light energy to the adhesive causes shrinkage in the adhesive, and that forces caused by the shrinkage can cancel each other out (column 12, lines 46-67). Takemoto discloses in the 4th embodiment that an irradiation control device (control and calculation 40) controls the light guide (30) and UV light source (37) so that the UV light energy illuminates the adhesive for a period of time, wherein the control and calculation activates and deactivates the UV light source (column 14, line 60 - column 15, line 48). Takemoto discloses in the 11th embodiment that the UV radiation unit is controlled by a CPU that turns the UV radiation unit ON and OFF. Takemoto discloses in the 12th embodiment that a UV radiation unit selectively irradiates the adhesive in response to a signal output from a controller (column 25, line 11 - column 26, line 11). Takemoto discloses the control and calculation controls in response to the data available from CCD cameras the position and target positions of the part and target (column 15-16), and Takemoto discloses the controller for controlling the UV radiation unit uses data inputted from a CCD camera (column 25-26), but Takemoto discloses the UV light energy is selectively controlled based on the thickness

Art Unit: 1791

and temperature of the adhesive and is silent as to controlling the irradiation energy when a relative displacement takes place between the part and the adhering target.

Hamada discloses a method of joining a part and an adhering target by a UV curable adhesive. The method comprises placing plural sections of UV curable adhesive between an image exposure means (12) and an optical base (120), curing the adhesive with UV energy from curing units (300A, 300B). Hamada discloses the image exposure means (12) and an optical base (120) may shift during the UV curing, in which case the exposure balance of the curing units can be changed in order to correct the positioning of the parts (paragraphs 0050-0053). The relative displacement or shifting of the parts is monitored during the curing process (paragraphs 0050-0052). Hamada discloses the positioning of the parts is monitored by a CCD sensor (paragraphs 0047-0049). Hamada teaches relative displacement between the parts being bonded can be adjusted by changing the irradiation energy at the plural sections of adhesive.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Takemoto by changing the irradiating energy of the UV energy based upon monitored relative displacement between the part and adhering part as taught by Hamada in order to ensure the part and adhering part are bonded in an accurate position.

With regard to claim 19, Takemoto discloses providing a position detecting device (CCD camera) to observe the positioning of the part and the target

Art Unit: 1791

(embodiments 4th, 12th), and Hamada discloses providing a CCD sensor to monitor the position of parts during UV curing (paragraphs 0047-0052).

With regard to claim 20, Takemoto discloses images from a CCD camera are sent to a controller, which is considered to be a feed back device for feed back detection results from the position detecting device (CCD camera) (column 25, lines 11-63).

With regard to claim 21, Takemoto discloses a coating device (applying means 28) to apply or coat the UV curable adhesive (column 14, line 66 – column 15, line 3).

With regard to claim 22, Takemoto discloses providing an irradiation control device (control and calculation) to selectively activate the UV light source (column 15, lines 27-33), and Takemoto discloses the shrinkage forces in the adhesive can be offset. Hamada discloses controlling the UV light source by changing the energy based upon a displacement detected by a positioning device (CCD sensor) so that the shrinkage forces could be changed.

Response to Arguments

5. Applicant's arguments filed 2/10/2010 have been fully considered but they are not persuasive. Applicant argues Takemoto does not disclose or suggest changing irradiation energy when the parts are relatively displaced from each other. As discussed in the rejection above, Takemoto discloses a CCD camera for detecting the positioning of the part and target, and a CCD camera for measuring the thickness of the adhesive. Takemoto discloses the UV light source is controlled by a controller that can selectively activate or turn ON and OFF the UV light source. Takemoto suggest controlling the

Art Unit: 1791

source based upon the inputted thickness of the adhesive from the CCD camera, but Takemoto is silent as to adjusting the UV light energy based upon the displacement of the part and target. Hamada suggests monitoring the position of the parts during UV curing and adjusting the UV light irradiated based upon the detected position of the parts to correct the positioning of the parts.

Applicant argues Hamada does not disclose changing the irradiation energy when the part and target are relatively displaced from each other during shrinkage of the adhesive so that the forces are offset, wherein the energy is changed by a control device by turning on and off a light energy irradiation device. Applicant is arguing the deficiencies of Hamada and Takemoto individually rather than the combination of their teachings.

In summary, Takemoto discloses the UV light source is controlled by a controller that can selectively activate or turn ON and OFF the UV light source. Takemoto suggests the shrinkage forces of the adhesive can be offset to achieve the desired position of the target and part. Takemoto suggest controlling the source based upon the inputted thickness of the adhesive from a CCD camera, but Takemoto is silent as to adjusting the UV light energy based upon the displacement of the part and target. Hamada suggests monitoring the position of the parts during UV curing and adjusting the UV light irradiated based upon the detected position of the parts to correct the positioning of the parts.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL MCNALLY whose telephone number is (571)272-2685. The examiner can normally be reached on Monday - Friday 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1791

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel McNally/
Examiner, Art Unit 1791

/John L. Goff/
Primary Examiner, Art Unit 1791

DPM
May 21, 2010